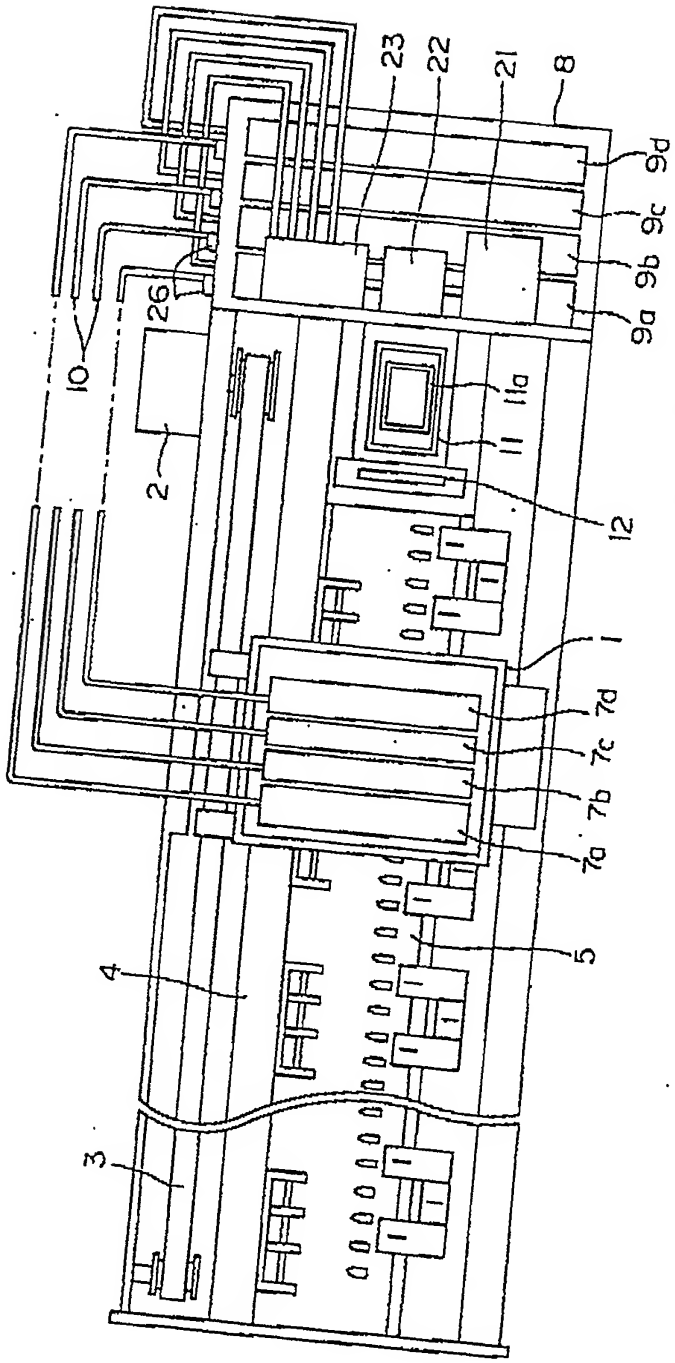


FIG. 1

Color Checker

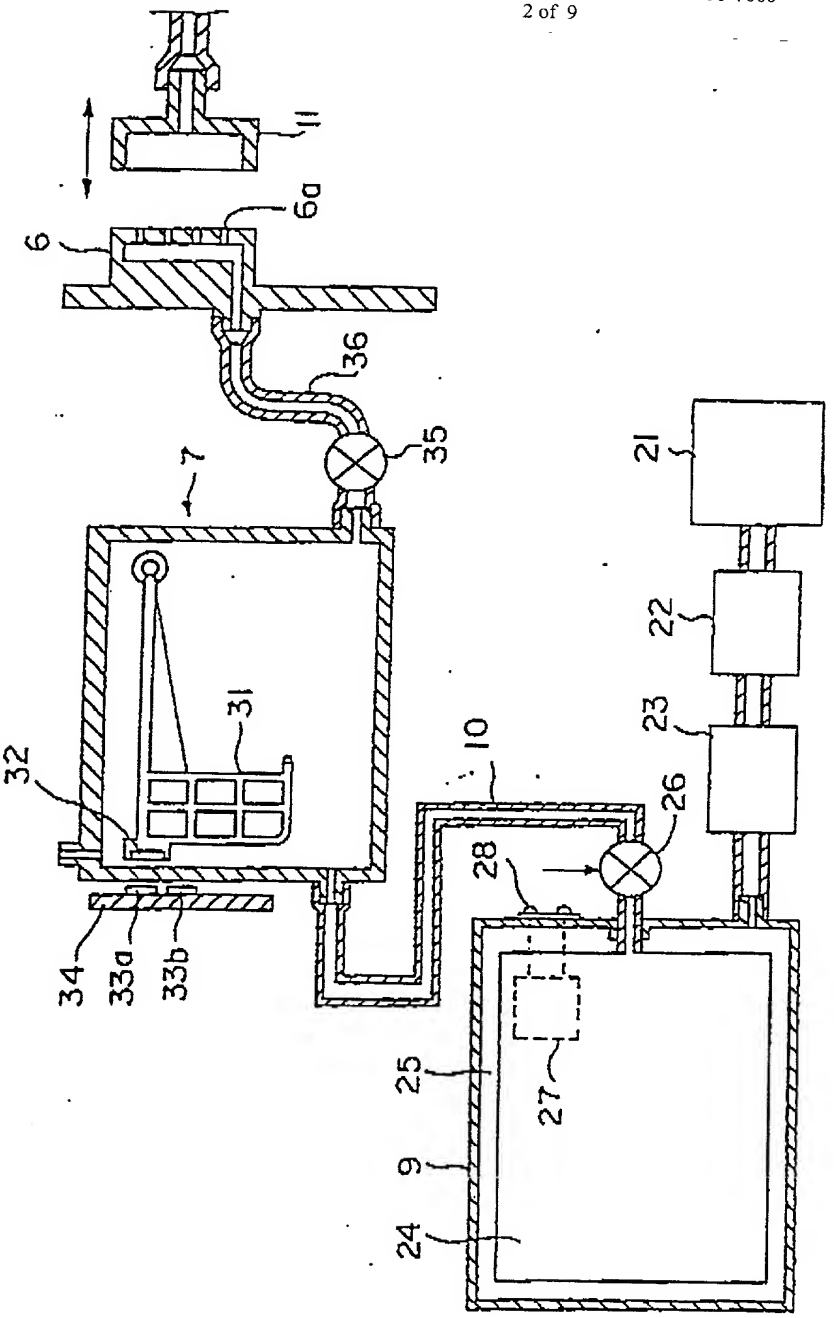


FIG. 2

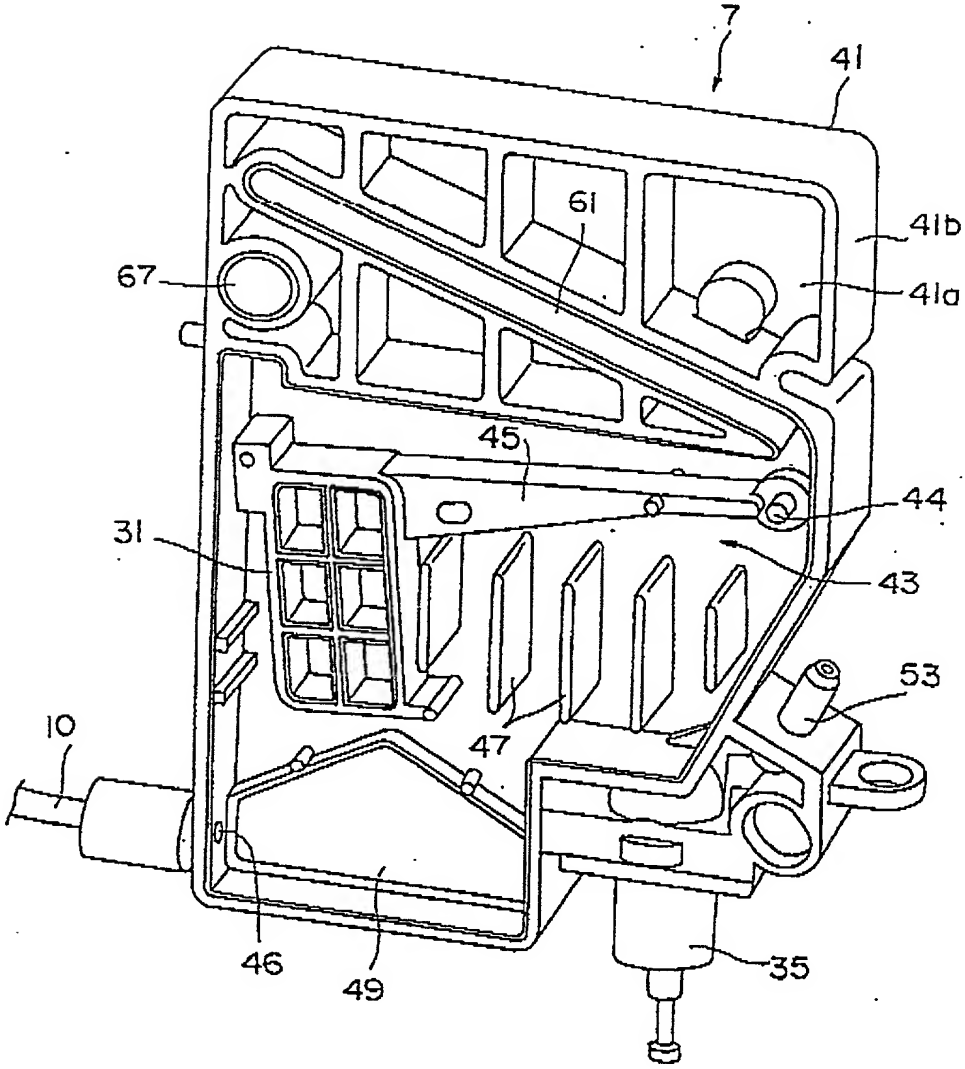


FIG. 3

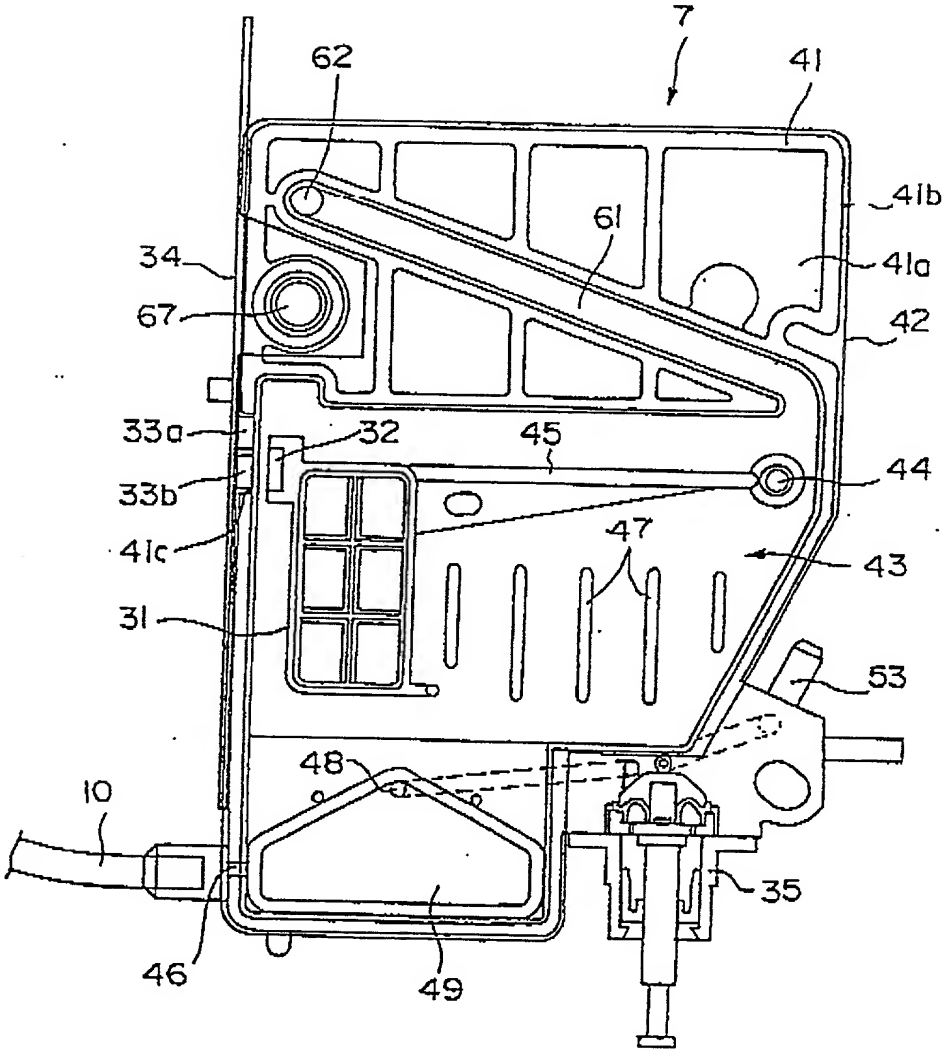
7
62
41
41b
61
34
41a
67
42
33a
32
45
44
33b
47
41c
43
31
53
48
10
35
46
49

FIG. 4

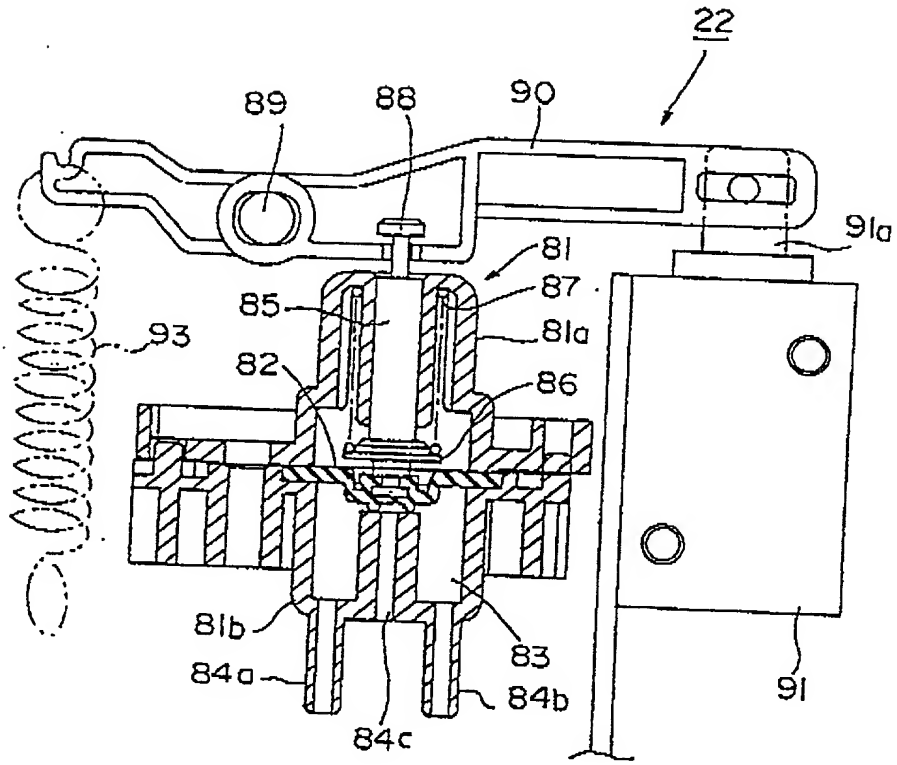


FIG. 5

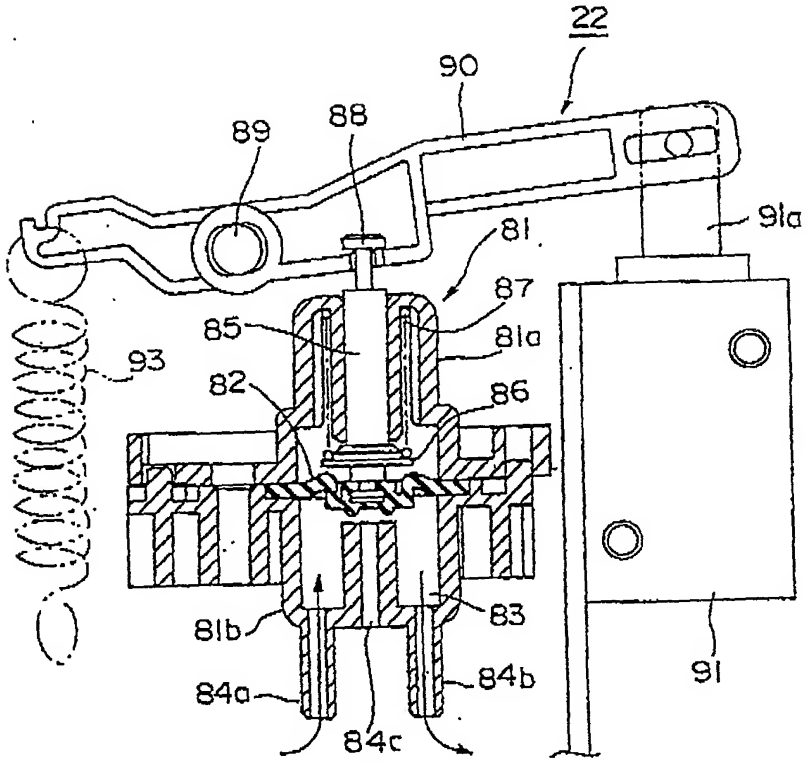


FIG.6

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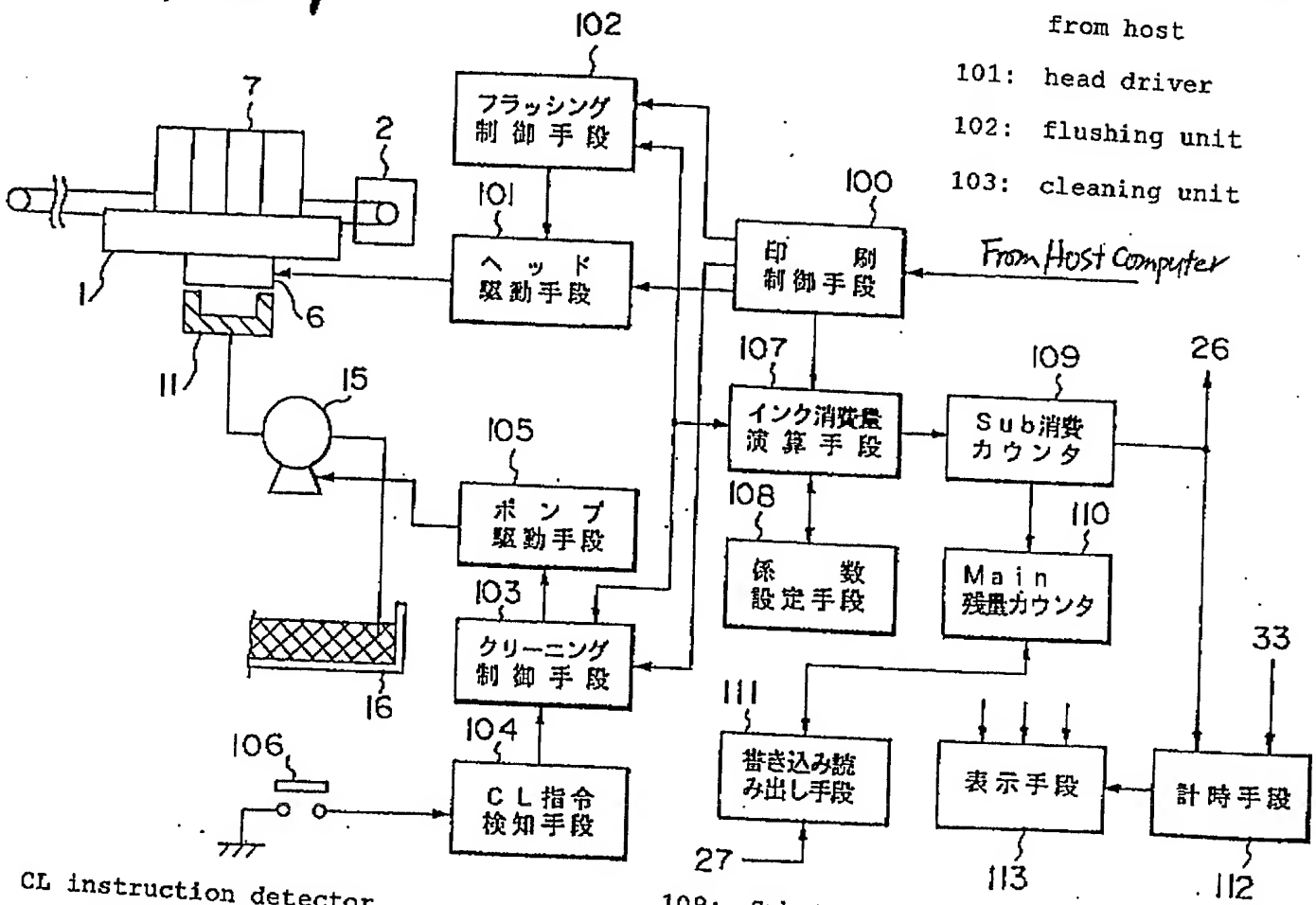
FIG 7




100: print controller from host

101: head driver

102: flushing unit

103: cleaning unit

104: CL instruction detector

105: pump driver

107: an ink consumption calculator

108: coefficient setting unit

109: Sub-tank ink consumption counter

110: Main tank remaining ink counter

111: write/read unit

112: timer unit

113: display unit

ARUGA, et al Q67848
INK JET RECORDING APPARATUS, AND METHOD OF SUPPLYING INK TO SUB-TANK OF THE INK JET RECORDING APPARATUS
Filed: December 21, 2001
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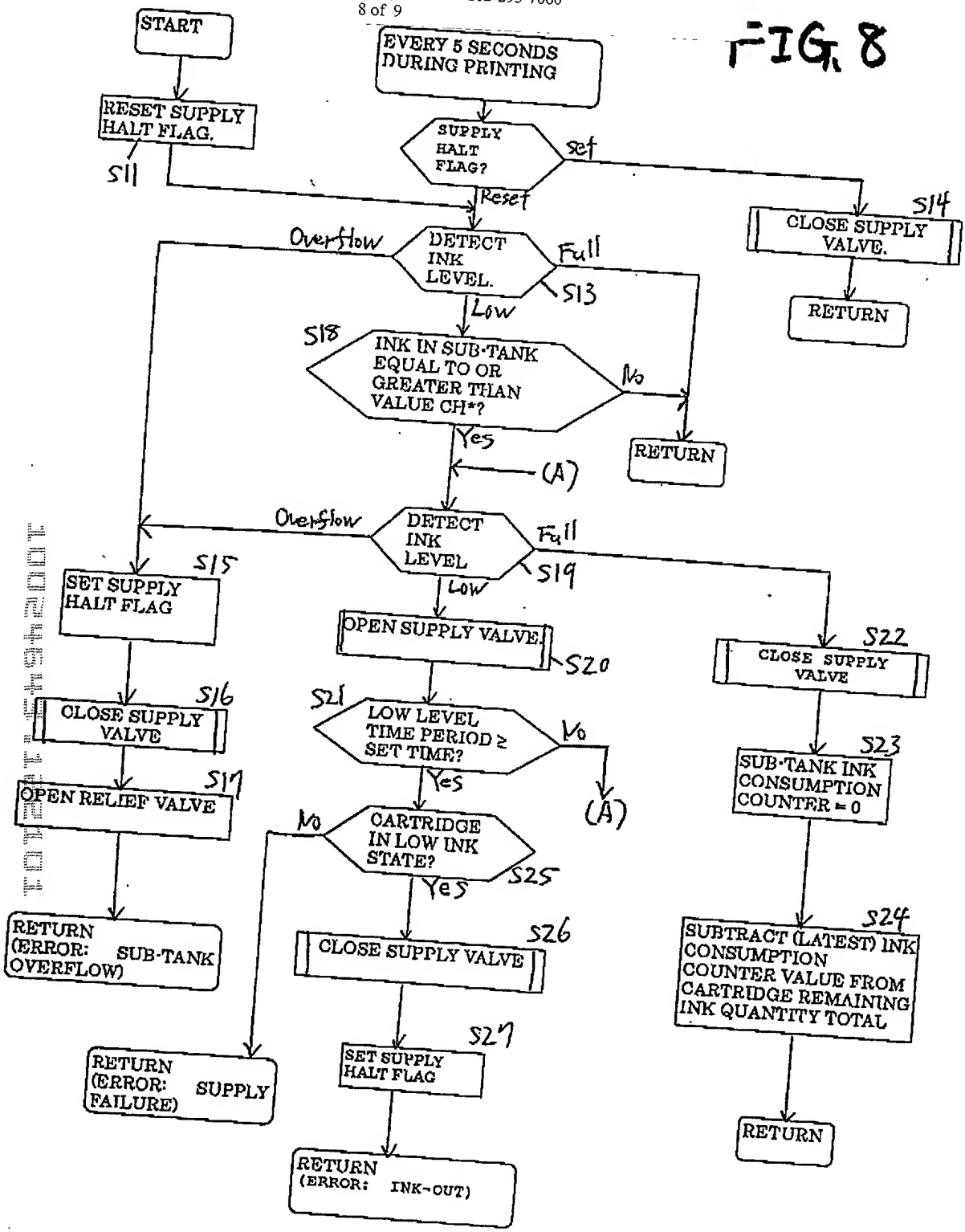
FIG. 8


START
RESET SUPPLY HALT FLAG.
S11
EVERY 5 SECONDS DURING PRINTING
SUPPLY HALT FLAG?
set
Reset
S14
CLOSE SUPPLY VALVE.
RETURN
Overflow
DETECT INK LEVEL.
Full
S13
Low
S18
INK IN SUB-TANK EQUAL TO OR GREATER THAN VALUE CH*?
No
Yes
RETURN
(A)
Overflow
DETECT INK LEVEL
Full
S19
S15
SET SUPPLY HALT FLAG
Low
OPEN SUPPLY VALVE
S20
S22
CLOSE SUPPLY VALVE
S16
CLOSE SUPPLY VALVE
S21
LOW LEVEL TIME PERIOD ≥ SET TIME?
No
Yes
(A)
S23
SUB-TANK INK CONSUMPTION COUNTER = 0
S17
OPEN RELIEF VALVE
No
CARTRIDGE IN LOW INK STATE?
S25
Yes
S24
SUBTRACT (LATEST) INK CONSUMPTION COUNTER VALUE FROM CARTRIDGE REMAINING INK QUANTITY TOTAL
RETURN (ERROR: SUB-TANK OVERFLOW)
S26
CLOSE SUPPLY VALVE
RETURN (ERROR: SUPPLY FAILURE)
S27
SET SUPPLY HALT FLAG
RETURN
RETURN (ERROR: INK-OUT)

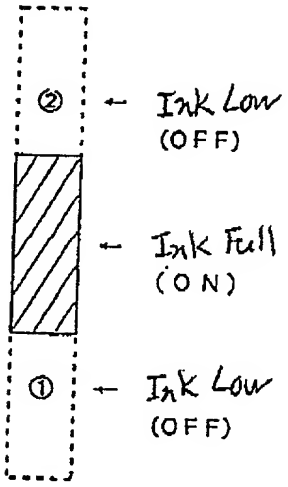



FIG.9

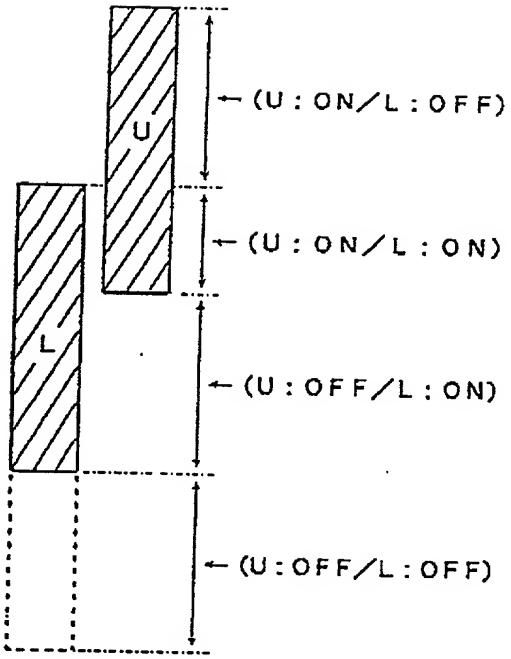



FIG.10A

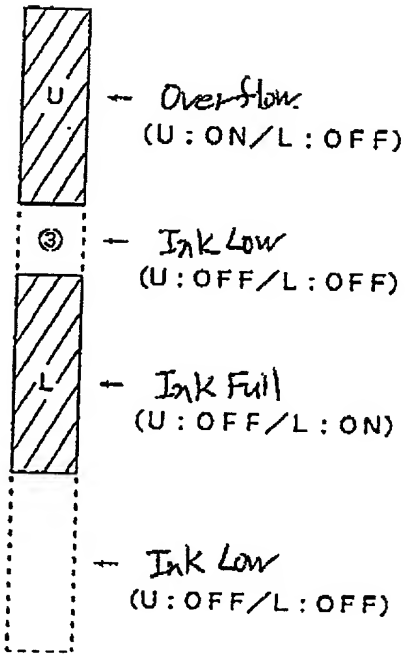



FIG.10B